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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,830	12/09/2003	Bahram Keramati	133743-1/YOD GERD:0072	4403
41838 7590 08/22/2007 GENERAL ELECTRIC COMPANY (PCPI) C/O FLETCHER YODER P. O. BOX 692289 HOUSTON, TX 77269-2289			EXAMINER LEUNG, PHILIP H	
			ART UNIT 3742	PAPER NUMBER
			MAIL DATE 08/22/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/731,830

Applicant(s)

KERAMATI ET AL.

Examiner

Philip H. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31, 41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31, 41 and 42 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Applicant's election without traverse of Group I, claims 1-31, 41 and 42 in the reply filed on 5-31-2007 is acknowledged. The nonelected claims 32-40 have been cancelled by the applicant.

2. As a result of the election, this applicant has been transferred to Group Art Unit 3742 and assigned to Examiner Philip Leung.

3. It is respectfully suggested that "Method and" be deleted from the title in order to properly reflect the elected invention in this application.

4. The drawings filed 12-9-2003 are objected to because the blank boxes in Figures 1-3 need to be labelled.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. At the outset, claims 1-6, 16, 17 and 28-31 are incomplete because “a power source” to power the radiator that is considered as an essential element is missing from the claimed particle reduction apparatus. Furthermore, the term “transparent shield” in claims 1 and 16 need to be more specific as “transparent” and “shield” appears to be contracting terms. More particularly, what is the function of “the shield” and what is it “transparent” to (such as, radiation transparent, light transparent, etc.)? In regard to claim 16, there is no structural, positional and/or functional relation between “a source of a gaseous flow” and “the particle reduction apparatus” as it is recited “a particle reduction apparatus comprising a radiation absorption zone for receiving a gaseous flow carrying particulate matter” which may or may not be from the same source. It is suggested that some kind of element linking the source and the zone be recited. Clarification and correction are required.

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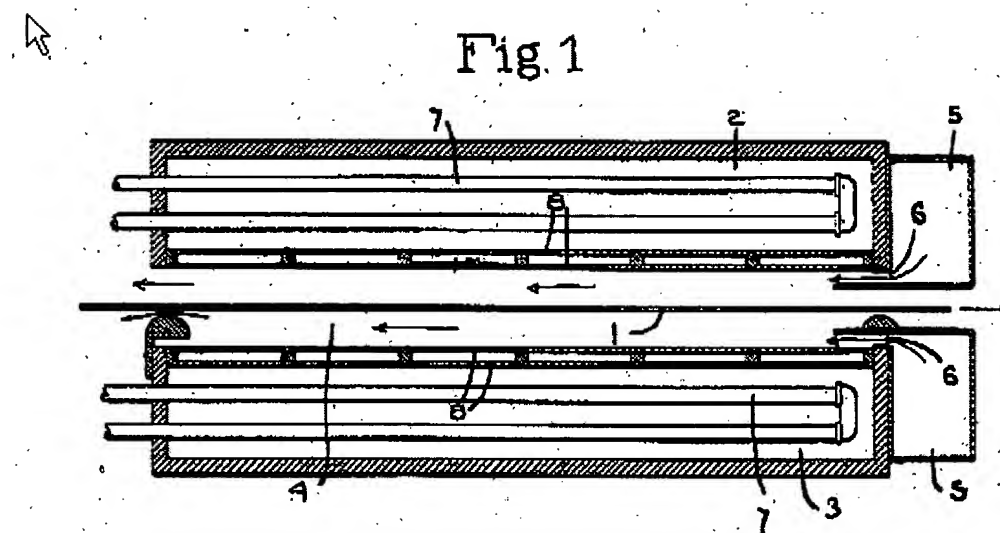
6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Andrews et al (US 1,560,589).

The broadly worded structure does not define over Andrews as it shows a radiation absorption zone for receiving a gaseous flow carrying particulate matter; a transparent shield (8) surrounding at least a portion of the radiation absorption zone; a radiation source (7) for generating radiation and for directing the radiation into the radiation absorption zone to promote reduction of the particulate matter; and an insulation layer at least partially surrounding the radiation source (see Figures 1 [as marked below] and 2 and page 2, lines 36-95). The limitations “particle reduction”, “radiation absorption”, for receiving a gaseous flow” are intended use only and add little patentability weight to the claimed structure. Andrews clearly can be used for the same function as it shows all the claimed structure.



8. Claims 1, 3, 5-9, 13, 18-20 and 24 are rejected under 35 U.S.C. 102 (b) as being anticipated by Henrie (US 4,170,455).

Again, the broadly worded structure does not define over Henrie as it shows a radiation absorption zone 14 for receiving a gaseous flow carrying particulate matter; a transparent shield (10) surrounding at least a portion of the radiation absorption zone; a radiation source 26 for generating radiation and for directing the radiation into the radiation absorption zone to promote reduction of the particulate matter; and an insulation layer (see col. 8, lines 3-8) at least partially surrounding the radiation source (see Figures 1 and 2 and col. 5, line 46 – col. 8, line 65). Again, the limitations “particle reduction”, “radiation absorption” are intended use only and add little patentability weight to the claimed structure. Henrie clearly can be used for the same function as it shows all the claimed structure as it also shows a source of a gaseous flow as claimed in claim

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16. In regard to claim 6, see col. 7, lines 55-68. In regard to claims 8, 9, 19 and 20, it also optionally includes a control device for control the power source of the heater 26 according to the sensing outputs of sensors 16 and 18 (see col. 8, lines 3-11).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1, 3-30, 41 and 42 are rejected under 35 U.S.C. 103(a) as being obvious over Henrie (US 4,170,455), in view of Wagner et al (US 5,101,095).

As set forth above, the broadly worded structure is met by Henrie as it shows a gas treating device with every feature as claimed except that it does not use the device as a particle reduction apparatus. More particularly, it shows a radiation absorption zone 14 for receiving a gaseous flow carrying particulate matter; a transparent shield (10) surrounding at least a portion of the radiation absorption zone; a radiation source 26 for generating radiation and for directing the radiation into the radiation absorption zone to promote reduction of the particulate matter; and an insulation layer (see col. 8, lines 3-8) at least partially surrounding the radiation source

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(see Figures 1 and 2 and col. 5, line 46 – col. 8, line 65). However, Wagner shows a device using a radiating heating source 38 with a power source 54 for treating exhaust to reduce particulate pollutants (see Figures 1-4 and col.2, line 43 – col. 3, line 45). It would have been obvious to an ordinary skill in the art at the time of invention to modify Henrie to use its device for treating exhaust gas source in order to reduce harmful pollutants to increase its utilities, in view of the Wagner. In regard to claim 6, see Henrie, col. 7, lines 55-68. In regard to claims 8, 9, 19 and 20, it also optionally includes a control device for control the power source of the heater 26 according to the sensing outputs of sensors 16 and 18 (see Henrie, col. 8, lines 3-11). In regard to claims 10-13, 21-23, 41 and 42, both Henrie and Wagner show the use of sensors for control the power to the heater. The exact arrangement of the control module would have been a matter of engineering expediencies depending on the overall system.

11. Claims 2 and 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.




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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Philip H Leung  
Primary Examiner  
Art Unit 3742

P.Leung/pl  
8-17-2007